

An Assessment of Public Perception of Online Pharmacy in Nigeria

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ABSTRACT

Background: Online Pharmacy is a growing trend in Nigeria. The public perception of online drug purchase in Nigeria is mixed, with some consumers drawn to the convenience and affordability, while others are concerned about poor regulation, financial fraud, and the quality and safety of the medications they purchase.

Aim: This study aimed to evaluate perceptions of online drug purchase in Nigeria.

Methods: The study was conducted among Nigerians on different social media platforms: Twitter, Instagram, WhatsApp and Facebook. A Google Forms questionnaire consisting of five sections was administered to the participants, then analyzed with the Statistical Package for Social Sciences (SPSS).

Results: A total of 137 people participated in the survey. Majority of respondents opined that the benefits of online drug purchase included convenience, a wide range of brands for selection, privacy, home delivery, and competitive prices. The risks they identified included receiving fake or adulterated drugs, financial fraud, lack of proper prescription, and unreliable delivery. 87.5% of respondents are not knowledgeable on how to safely purchase medications online. 78.3% of respondents said that social media was the most common source of fake drugs amongst online drug vendors.

Conclusion: The study revealed that although many Nigerians had bought items online, few had bought medications online. The most common source of fake drugs is social media platforms. Many Nigerians do not know how to safely purchase drugs online and believe that online drug purchase is poorly regulated.

KEYWORDS

Online Pharmacy, Public Perception, Convenience, Regulations, Fake Drugs, Consumer Safety

INTRODUCTION

In 2022, Nigeria ranked 40th in the world e-commerce list, ahead of countries like Israel and Pakistan (NBS 2022). Online shopping is becoming increasingly popular in Nigeria, particularly among affluent and middle-class Nigerians, as well as professionals, technocrats, and students who live in urban areas. (Aminu, 2013). Nigerians shop for clothing, electronics, shoes, cosmetics, food, movies, music, health products, and other items online (Statista 2023).

In a study, respondents opted for online drug purchase because it allows clients to order during off hours, saves time, cheaper, cuts trip to the store, provides online medication information and refill reminder ^[1]. A wide range of therapeutic drugs are available online, including performance-enhancing and image-enhancing drugs such as Viagra and anti-baldness products, as well as life-saving medicines such as analgesics (non-steroidal anti-inflammatory drugs, opioids), psychiatric drugs, obesity drugs, and cardiologic drugs ^[2].

In a recent study, two-thirds of Nigerian respondents in a survey expressed interest in purchasing medicines online ^[3]. Online drug purchases can help patients in many ways, such as cheaper drug prices, around-the-clock access to medicines, wide range of choice, relative privacy that may allow patients to ask awkward questions, and the availability of prescriptions, for those who cannot leave their house ^[4]. However, this does not come without attendant risks. Respondents to a survey expressed concerns over buying medications online, citing ease of self-medication, inadequate information from online platforms, delayed deliveries compared to in-person access, fake drugs, and difficulty in choosing from the numerous drugs in array ^[1].

In June 2013, the US Food and Drug Administration (FDA) shut down 1,677 websites that were selling fake or substandard medications ^[5]. The FDA cautions that drugs purchased online may be counterfeit, contaminated, outdated, or have incorrect dosages. They may also contain harmful impurities or unknown ingredients ^[6]. The average internet user is not equipped to assess the trustworthiness of websites, which can lead to them accessing unsafe or fraudulent sites ^[7]. Many consumers are likely to be misled by sellers who use professional design, hide untrustworthy features, fake patient testimonials and mimic reputable websites ^[8]. The average internet user is not equipped to assess the genuineness of E-commerce websites, which can lead to them accessing unsafe or fraudulent sites ^[7]. A study in the United States also revealed that many consumers do not know how to safely purchase medications online ^[9]. These consumers would benefit from educational initiatives that communicate the dangers of buying medications online and develop their information evaluation skills.

Data Analysis: The collated data was entered into Microsoft Excel and coded before exporting into the Software Package for Social Sciences (SPSS) version 22 for analysis.

Descriptive statistics on the socio-demographic characteristics of respondents will be analyzed by computing frequency tables, proportions (percentages), and descriptive cross-tabulations.

Ethical Considerations: The study was carried out in tandem with the Helsinki Declaration on ethical principles for medical research involving human subjects. The study protocol was submitted to the Nnamdi Azikiwe University Teaching Hospital's Research and Ethics Committee for approval. Confidentiality and anonymity of the respondents were ensured by the removal of all identifiers.

RESULTS

Socio-demographic Characteristics of the Respondents

The study's sample consists primarily of respondents aged 18-34 (95.5%), with a near-even gender split (51.1% female, 48.9% male). Geographically, the South-East region is the most represented (52.6%). Education-wise, 75.6% have at least a Bachelor's degree. Occupation-wise, students comprise the majority (51.0%), followed by self-employed individuals (16.8%). Participants on full-time, part-time employment, the unemployed, and retired participants make up smaller proportions. These demographic details will aid in understanding the perceptions of online drug purchases among Nigerian consumers, with a focus on the younger, educated population.

Variables		Frequency	Percentage
Age (in years)	18 - 24	75	54.7
	25– 34	56	40.8
	35 - 44	4	2.9
	> 45	2	1.5
Gender	Male	67	48.9
	Female	70	51.1
Region	South-East	72	52.6
	South-West	38	27.7
	South-South	14	10.2
	North-Central	7	5.1
	North-East	2	1.5
	North-West	4	2.9
Highest level of education?	Primary school	0	0
	Secondary school	28	20.7
	Bachelor's degree	102	75.6
	Master's degree or higher	7	5.2
Occupational status?	Employed (full time)	22	16.1
	Employed (Part time)	13	9.5
	Self employed	23	16.8
	Unemployed	9	6.6
	Student	70	51
	Retired	0	0

Table 1: Socio-demographic characteristics of respondents.

Variables		Frequency	Percentage
Have you ever purchased an item online?	Yes	121	89
	No	14	10.3
	Maybe	2	1.5
Items purchased online	Fashion	88	73.3
	Electronics	68	56.7
	Food	56	46.7
	Cosmetics	48	40
	Medications	15	12.5
Have you ever purchased medicines from an online drug vendor in Nigeria?	Yes	3	2.4
	No	116	92.8
	Maybe	6	4.8
If yes, what was the medicine?	Prescription medicine	4	16
	OTC medicines	5	20
	Vitamins and supplements	10	40
	Herbal medicines	6	24
How often do you purchase medicines from an online drug vendor in Nigeria?	Frequently	2	1.7
	Occasionally	7	6
	Rarely	16	13.6
	Never	93	78.9

Table 2: Prevalence of Online drug purchase behaviour of respondents.

Variables		Frequency	Percentage
Benefits of purchasing medicines from online drug vendors in Nigeria	Convenience	108	78.8
	Wide range of selection	17	12.4
	Privacy	62	45.3
	Home delivery	92	67.2
	Competitive prices	21	15.3
	None	11	8
The risks of purchasing medicines from online drug vendors in Nigeria	Receiving fake or adulterated drugs	118	87.4
	Financial fraud	100	74.1
	Lack of proper prescription	74	54.8
	Unreliable delivery	82	60.7
Have you ever experienced any negative effects from using fake or adulterated medicines from online vendors in Nigeria?	Yes	4	3.1
	No	121	93.8
	Maybe	8	6.2
If yes, what are they?	Fever	3	2.1
	Headache	3	2.1
	Nausea	2	1.5
	Rashes	2	1.5
	Cough	1	0.7
	Swollen face or ankle	3	2.1

Table 3: The benefits and risks of purchasing medicines from online drug vendors

Variables		Frequency	Percentage
Are you aware of the issue of fake and adulterated medicines being sold in Nigeria?	Yes	133	97.1
	No	3	2.2
	Maybe	2	1.5
Have you ever purchased a medicine from online drug vendors in Nigeria that turned out to be fake or adulterated?	Yes	3	2.2
	No	125	93.3
	Maybe	6	4.5
Do you believe that fake and adulterated drugs pose a threat to public health in Nigeria?	Yes	135	98.5
	No	1	0.7
	Maybe	2	1.5
Have you ever received any information or education on how to safely purchase medicines from online vendors in Nigeria?	Yes	14	10.3
	No	119	87.5
	Maybe	3	2.2
Have you ever purchased medicines from online drug vendors in Nigeria that were not registered with NAFDAC?	Yes	3	2.2
	No	121	89.6
	Maybe	11	8.1

Table 4: Perception of the proliferation of fake and adulterated drugs by online drug vendors in Nigeria

Variable		Frequency	Percentage
Do you believe that there is adequate enforcement and regulation of online drug vendors in Nigeria?	Yes	10	7.5
	No	110	82.1
	Maybe	15	11.2
Do you believe that public awareness campaigns on the risks of purchasing medicines online would be effective in addressing the issue of fake and adulterated medicines in Nigeria?	Yes	117	85.4
	No	6	4.4
	Maybe	17	12.4
Do you think the sale of counterfeit drugs by some online drug vendors affects the reputation of Nigeria's pharmaceutical industry?	Yes	129	95.6
	No	5	3.7
	Maybe	2	1.5
Have you ever heard any of the regulators warn of the dangers of purchasing medicines from online drug vendors?	Yes	42	30.9
	No	85	62.5
	Maybe	11	8.1

Table 5: Perception of regulations of online drug vendors in Nigeria.



Figure 1: The common sources of fake drugs in Nigeria's online drug market.

DISCUSSION

The study provides a comprehensive overview of the perceptions and experiences of Nigerian consumers regarding online drug purchases. Majority of the respondents, in the study population, are young adults aged 18-34. This demographic composition suggests that the study primarily focuses on the perspectives of a digitally savvy and educated population. This corresponds with a similar study conducted in Italy where the majority of respondents were aged 26 to 35 years ^[10].

The South-East region stands out as the most heavily represented, indicating some regional diversity in the sample. Education-wise, a significant proportion of respondents have attained at least a Bachelor's degree, indicating a well-educated sample. Occupation-wise, students make up the largest group, followed by self-employed individuals, with smaller percentages of full-time employees, part-time employees, unemployed individuals, and retirees.

A significant proportion of respondents (89%) have engaged in online shopping, particularly for items like fashion, electronics, and food, a smaller percentage (12.5%) had ventured into online medication purchases. This suggests that online drug purchases are less common than other online shopping activities, pointing to potential concerns or barriers specific to this domain. Additionally, the majority of respondents (78.9%) have never purchased medicines online, indicating a degree of caution or hesitancy in this area. This was consistent with a study conducted in countries like Hungary (96%), Saudi Arabia (98%), and Italy (91.8%) where the respondents had never purchased medications online ^[2].

Respondents identify several advantages and concerns related to purchasing medicines online. Key benefits include convenience, a wide selection of products, privacy, home delivery, and competitive prices. This corroborates a similar study by Fittler et al, in 2022, although, they expressed significant apprehensions. The foremost concern is the possibility of receiving fake or adulterated drugs, as opined by ^[12]. which was reported by 87.4% of respondents. Financial fraud, lack of proper prescriptions, and unreliable delivery also raise substantial concerns among a significant portion of the sample. This was revealed earlier in a similar study in Uyo metropolis of Nigeria, conducted by Ndem ^[3]. Moreover, a small percentage (6.2%) reportedly experienced negative effects from using fake or adulterated medicines, with symptoms such as fever, headache, and nausea being mentioned. These findings underscored the dual nature of online pharmaceutical transactions, characterized by perceived benefits but also significant risks to consumer safety and health.

Interestingly, a relatively low percentage (10.3%) of respondents reported having received information or education on safe online medicine purchases, suggesting the potential for enhanced public awareness campaigns in this area. A study in the United States also revealed that many consumers do not know how to safely purchase medications online [9].

Furthermore, a small number of respondents (2.2%) have purchased medicines online that were not registered with NAFDAC, raising questions about regulatory oversight and enforcement in the online pharmaceutical market. Concerns about the regulation of online drug vendors in Nigeria are notable, with 82.1% of respondents expressing the belief that enforcement and regulation in this domain are inadequate. In a study, it was revealed that some drug vendors use the internet to evade the regulatory systems in the United States of America [12].

However, the majority of respondents (85.4%) are optimistic about the effectiveness of public awareness campaigns in addressing the issue of fake and adulterated medicines. In the year 2000, FDA launched a media campaign about safe ways to purchase pharmaceutical products over the Internet [12].

A substantial proportion of respondents (95.6%) agrees that the sale of counterfeit drugs by some online vendors negatively impacts Nigeria's pharmaceutical industry, underscoring the potential reputational and economic consequences of this challenge.

It is worth noting that a significant portion of the sample (62.5%) had not heard regulators issue warnings about the dangers of purchasing medicines from online drug vendors, indicating a need for more proactive communication and education by regulatory authorities. In contrast, the United States has developed regulations and policies to protect its consumers who purchase medications online [13].

Suffice it to say that when asked about the sources of fake and adulterated drugs in Nigeria's online drug market, majority of respondents (78.3%) point to social media platforms as the most common source, while a smaller percentage (21.7%) identified e-commerce platforms and online pharmacies. This insight highlights the prevalence of social media as a potential channel for illicit online drug sales and emphasizes the importance of monitoring and regulation in this market space.

CONCLUSION

The study revealed that although many Nigerians had bought items online, only few of them had bought medications online. The most common source of fake drugs is social media platforms, and many Nigerians do not know how to safely purchase medicines from online medicine stores because they believe that online medicines purchase is very poorly regulated.

RECOMMENDATIONS

A multi-pronged approach is required to improve the public perception of online drug purchase in Nigeria. This can be accomplished by raising awareness among consumers through advertising and sensitization campaigns, conducted by regulatory agencies and healthcare influencers on the internet. Regulatory agencies and Pharmaceutical bodies should adapt to the changing times and educate our communities on safe purchase of medications from verified Pharmacy Council of Nigeria (PCN) approved vendors.

The National Agency for Food and Drug Administration and Control (NAFDAC) must launch online raids on illicit online drug retail platforms, especially those on social media platforms. This would go a long way to helping to sanitize the Online Pharmacy platforms,

which has come to stay globally, as Nigeria cannot be left out in this global shift in consumer satisfaction as it concerns purchase of medications through online Pharmacies and platforms.

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